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Original Contributions.

FIBROUS POLYPUS OF UTERUS---REMOVAL BY LIGATURE.

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In order to make the report of the following case more intelligible, I shall premise it by reference to well-established facts, relating to the pathology and treatment of uterine tumors. These facts, being mainly obtained from the "Lectures of Dr. Charles West, on Diseases of Women," whose work contains the results of the collective observations, and experience of the best observers, upon the subject, and whose language I have freely quoted.

Ovarian dropsy, and tumors, as well as cancer of the uterus, need not be considered in this connection, but those less fatal, and non-malignant tumors of the womb, that affect some part of the body or cervix. "Hypertrophy of the uterus is more frequent than of any other organ, and each of its component tissues is liable to a similar overgrowth," constituting tumors. When the mucous membrane of the cervix becomes hypertrophied, small pendulous or sessile tumors are formed, composed wholly of an overgrowth of mucous membrane, called "mucous polypi." "If a larger quantity of cellular tissue enters into their composition," they become somewhat larger, and are "made up of fibro-cellular tissue, having an investment of cervical mucous membrane."

"More frequent than the last-mentioned tumors are those of a more complex character, into the formation of which there enter, not only the mucous membrane of the cervical canal, or its hypertrophied cellular tissue, but also the large mucous follicles of the cervix," and constituting the "glandular polypi."

Sometimes, these mucous follicles, or Nabothian glands, are hypertrophied, forming small "cysts," "without any outgrowth of the mucous membrane, or proper tissue" of the cervix. These growths, so far considered, are the simplest forms of uterine tumors, of small size, and almost always proceed from the cervical mucous membrane, and nearer the external than internal os, rarely springing from the mucous membrane of the body of the uterus. When the muscular walls, or proper tissue of the uterus, takes on an overgrowth, the *fibrous tumor* is produced, in "structure almost identical" with the uterine tissue—very frequent in their occurrence—may occupy any part of the exterior or interior of the womb, more frequently proceeding from the posterior wall, and are "rarely solitary, several tumors usually being present at the same time, one or two generally outstripping the others in their growth." They may be "developed immediately beneath the peritoneum that covers the uterus." These "superficial growths are generally limited to the fundus, more frequent on the posterior than anterior surface, and generally remain of small size;" may "proceed from the thickness of the uterine walls, and grow outward toward the cavity of the peritoneum, or inward toward the cavity of the womb, the former mode being the more frequent;" or may remain imbedded within the walls of the uterus, with no tendency to project outward or inward.

The tumors that grow outward are connected with the uterus by a thick pedicle, into which uterine fibers enter, but are not invested by uterine substance, like those that grow toward the cavity of the womb." "When they grow internally, they are sometimes positive outgrowths from the uterine tissue," their texture, and that of the uterus, being interwoven together, "and are often much more abundantly supplied with blood than

the other varieties of these growths." The pedicle of the tumor is formed by uterine and dense cellular tissue, its proper coverings being the uterine mucous membrane, which envelops it completely, and a layer of uterine substance which, in some cases, invests it partially, and in others, completely, the mucous membrane and muscular tissue "undergoing development somewhat in proportion to the tumor;" such being its coverings, instead of "a fibro-cellular capsule of an ordinary fibrous tumor," and which constitutes that form of fibrous tumor called *fibrous polypus*.

The other varieties of fibrous tumors are distinct from the uterine tissue, whether imbedded in it or projecting from it, and are invested with a more or less complete "capsule of fibro-cellular tissue."

"Whatever the point of origin" of fibrous tumors, and whether they grow outward toward the cavity of the peritoneum, or inward toward the cavity of the womb, "they usually have a tendency to form a neck or pedicle," an important fact to be remembered.

"The influence which these growths exert upon the uterus is in proportion to the intimacy of the relation between the tumor and womb, rather than to the size to which the tumor attains." "When situated external to the womb, and growing into the peritoneal cavity," the tumor may acquire "an enormous size," and the uterus be perverted in shape, but little increased in size. A tumor imbedded and growing within the uterine walls developes the uterus similar to pregnancy. "The growths that project into the uterine cavity" produce a great increase in the size of the womb, not only from the expansion of its walls by the pressure of the growing tumor, but by an actual hypertrophy or growth of its substance.

Fibrous tumors sometimes exist, even of large size, without disturbing the functions of the organ at all. The constancy of the symptoms is generally proportionate to "the intimacy of the relation between the tumor and womb." "The growths which proceed from the outer surface of the womb often produce no symptom except such as may be due to their mechanical pres-

sure upon adjacent organs, whilst those that are imbedded in the uterine substance almost always disturb the functions of the organ, even before they have attained any considerable size; and the polypi, or growths, which occupy the cavity of the womb, attract attention, almost from the first, by the hemorrhage they occasion;" the source of the hemorrhage was formerly thought to be from the tumor, or polypus, but is now considered to be from the irritated mucous membrane of the uterus.

There are several different methods by which nature attempts a cure, and sometimes cures fibrous tumors. That variety of fibrous tumor, that grows into the uterine cavity, has a "constant traction" exerted upon its pedicle, by the contractions of the uterus, gradually stretching and attenuating it, until it finally gives way, or is snapped off by the violent contractions of the womb; or, the margins of the os uteri may constrict the pedicle, and strangulate it, ligate it, as it were; or, "a portion of its investment," or covering, may ulcerate, and the tumor "gradually shell out"; or, "a change takes place in its substance," allied to softening, its tissue becoming gradually disintegrated, and flowing away as an offensive, dirty matter; this "is not a process of inflammation," with any of its results, but takes place without any symptoms of inflammation. I have met with one instance of the spontaneous cure of a fibrous tumor by this process. The tumor had existed for twenty years, the woman, for ten years, not being able to walk, and for two years, confined to her bed. An offensive discharge commenced to flow from the womb, and after a lapse of several years, the tumor disappeared, no doubt undergoing softening and disintegration. A process of softening, or death, often takes place "in the lower part of fibrous polypi, where they project through," or against "the os uteri"; "the mucous membrane covering it ulcerates, and thus being deprived of its most important source of nutrition, the adjacent surface of the tumor loses its vitality," and becomes disintegrated, the softening and death extending, perhaps, to the entire tumor; or, the tumor may undergo "the cretaceous transformation." These pro-

cesses of softening and calcareous transformation are similar to what sometimes takes place in a tuberculous bronchial gland, or tubercle of the lungs. In those cases in which a cretaceous transformation of a fibrous tumor takes place, the growth has no longer a "vital relation" with the womb, consequently, the "derangements of function, which it produced, diminish or disappear"; in some rare instances, the calcareous mass is expelled. Tumors growing from the peritoneal surface, sometimes become spontaneously detached, the pedicle being, probably, absorbed, and the tumor becoming fixed near its point of origin, by "false membrane," its vital connection with the uterus having ceased. Fibrous tumors are, probably, never removed by absorption.

I have mentioned the methods by which nature sometimes effects a cure in cases of fibrous tumors. Art has several modes. Little or nothing can be expected from the use of medicine in these cases, except it may possibly be "to retard their growth" by the use of iodine, or bromide of potassium. It is only by surgical interference, that our art is of avail.

Those fibrous tumors that grow into the uterine cavity, having a neck, or pedicle, may be removed by excision, ligature, by the ecraseur, torsion, and by the "galvano-caustic wire."

The removal by ligature, has been the mode most commonly practiced, on account of the supposed less danger from hemorrhage, than by excision, yet experience has proved that the per cent of danger, from hemorrhage, by excision, is very small, even if the pedicle be large, fibrous tumors, or polypi, even having been "been cut away peicemeal," without dangerous hemorrhage. In the use of the ligature, there is more danger from purulent infection than by any other method, requiring several days to complete the operation, and subjecting the patient to greater inconvenience.

The operation, by means of the ecraseur, is a combined crushing and cutting process: a metalic ligature, like a chain saw, without teeth, or a wire rope, or cord, composed of many strands of annealed iron wire, twisted together, is carried around the neck of the tumor, then, by means of an apparatus to which

the ligature is attached, and in which it works, drawn slowly and with great force, until the pedicle is cut and crushed off, thus obviating the small per cent of danger, from hemorrhage, attendant on excision, and rendering the danger from pyæmia very much less than by ligature. The method by torsion, or twisting, is only applicable to small polypi with slender pedicles.

The operation by means of the galvano-caustic wire, is a combined cutting and burning process: a platinum wire is passed around the pedicle of tumor, then heated, by a strong current of galvanism passed along it, the hot wire being dragged through the tissue by an appropriate handle. This method would seem to be preferable to all other modes, so far as danger from hemorrhage and pyæmia are concerned, but requires a battery of great power.

Those growths, that lie imbeded within the uterine walls, or grow outward into the peritoneal cavity, have, in some instances been removed, either "by enucleation through the os, or lower segment of the uterus," or by abdominal section, in some instances, the uterus being extirpated with tumor, but these operations have been attended with great fatality. Of late years, however, a greater proportion of successful cases have been reported of the extirpation of the uterus for fibrous tumor, by the knife, or the ecraseur, the latter mode being considered the better, mainly on account of the less liability to hemorrhage. One of the most remarkable operations of this kind, was recently performed by Dr. Storer, of Boston, a report of which was published in the *Amer. Jour. Med. Sciences*, for January, 1866.

Keeping in view these facts, as regards uterine tumors, the main points of interest in the following case will appear more clearly:

Mrs. H——r; age 41; dark-brown, reddish hair; fair skin; nervous, sanguine temperament. Previous history, eight years ago, soon after the birth of her last child, hemorrhage commenced from uterus, occurring not only at the monthly periods, but between them. I first examined her in the Spring of 1865, diagnosed a fibrous tumor growing within the uterine walls.

Her general health during this period has been poor, being anæmic from loss of blood, but still has kept about, except at those periods of the occurrence of hemorrhage, at which times she also suffered severe pain.

December 31st, 1866. For some time past, she has had, every two weeks, severe pains, the character of which have been more "like labor pains," but unattended with hemorrhage; in fact, the hemorrhage, for several months past, has been growing less. The cause of the cessation of the hemorrhage is not clear to me. Dr. Charles West, in his Lectures on the Diseases of Women, claims that the hemorrhage takes place from the uterine mucous membrane, and that "tumors hanging by a pedicle into the uterine cavity are attended by one invariable symptom, *viz.*, hemorrhage;" that it may cease suddenly if the tumor escapes into the vagina, or if its vital connection with the uterus ceases from those spontaneous changes, before alluded to; but in this case, none of those conditions occurred, yet the hemorrhage ceased. The abundant leucorrheal discharge, which has from first been a persistent symptom, has continued, mixed with debris from the tumor, the investing mucous membrane of which can be seen through the speculum to be ulcerated, at that part of the tumor that presses against the os, the adjacent part of the tumor having become softened, and disintegrated, an offensive, dirty, white discharge resulting. Os, dilated to the size of a silver half dollar, when uterus is not contracting, and rigid, closing tightly around the finger, when contraction comes on, the tumor being pressed firmly down against the os, filling up and engaged in the superior strait, as to size, feeling like a child's head at full term. The neck, or pedicle, feels as large as one's wrist, appearing to proceed from the posterior wall, and fundus of uterus; its attachment to the uterine walls cannot be clearly defined. I supposed, however, that I had ascertained the limit of the attachment inferiorally.

The base, or that part of the tumor presenting, is easily compressed, and has a very elastic feel, the neck is more firm. The tumor, nearly two years ago, being characterized by greater density, and hardness, and very much larger. The

abdominal tumor extends as high as the umbilicus, occupying the space to the right, between the median line and crest of right illium.

She has obtained relief from the acute pain, by use of tinct. opii., taking f. ʒvj., in two hour's time. The pain from the violent contractions of the uterus is so severe, that the tinct. opii., even in these large doses, fails to give relief. I accordingly introduced within the os uteri, 15 grs. of the solid extract of opium, every six hours, which gave comparative relief from pain, and aided much in relaxing the os; at times, the pain was so severe, that chloroform was given by inhalation, in addition to the opium. After a few days had elapsed, when she had become comparatively free from pain, I commenced to dilate the os, by means of sponge tents, preparatory to removal of the tumor. This method of dilating the os, was, I believe, first brought to the notice of the profession by Prof. Simpson, of Edinburgh. In about ten days from the time I first commenced the use of the sponge tents, the os had become dilated to the size of a circle two inches in diameter, and soft and dilatable, the base of the tumor presenting within the os.

January 15th. It was now determined to remove the tumor. Appetite fair; pulse good. Drs. Everett and Law were called in, who rendered valuable assistance in the operation. The plan of operation, was to seize the tumor with the ordinary obstetrical forceps, as one would a child's head for delivery, bring it down beyond the vulva, or as low as possible, and excise it, as advised by Dr. Charles West, and other eminent obstetricians and surgeons; but in case this should prove to be impracticable, or very difficult, then to ligate it. The patient was placed upon her back, hips near the edge of the bed, legs and thighs flexed, and held apart by an assistant, chloroform administered, the forceps applied, the tumor, by steady traction, brought down, engaging in the inferior strait, rendering prominent and full the perineum, as a child's head would do, the base of the tumor appearing at the vulva, and, just as I expected, it was about to pass the inferior strait, the forceps slipped off, and the tumor partly returned within the uterus.

The forceps were reapplied, tumor brought down as before, when they again slipped off. They were applied a third time, and as the base of the tumor appeared at the vulva, a strong hook was thrust into it, and the tumor held down, as the forceps slipped off. The farther effort to bring the tumor beyond the vulva was abandoned for fear of producing inversion of the womb. The tumor, from its large size, filling up so completely the cavity of pelvs and uterus, making it difficult to use a cutting instrument, the plan of excising the tumor was abandoned, and a ligature applied around the supposed neck or pedicle of tumor, by means of Gooch's double canula.

The uterus became much reduced in size after the tumor was brought down, but the abdominal tumor still remained quite prominent, this was supposed to be accounted for by the large size of the pedicle, and the hypertrophy of the uterus, it was not thought that any part of the tumor was above the ligature, except the portion of the pedicle above, and attached to uterus. The tumor at the base was cleft, so as to form two lobes, pear-shaped, of a purple or dark raspberry color, elastic, easily compressed; it could not have been very vascular, as but a few drops of blood flowed, as the large, sharp hook was thrust deeply into its substance. The immediate constitutional effects of the operation were not severe; the pulse, during the operation, was full, and strong. She was now given, within two hours, f. ʒvij. of tinct. opii., and five hours after the operation, free from pain, skin warm, pulse full, a little sleepy—the tinct. of opii. was continued in f. ʒj. dose every two hours for twelve hours.

Three days before the operation, I commenced to give sulphite of soda, grs. x., every three hours, to guard against blood poisoning, which was continued until after the tumor had all sloughed away. Injections of a weak solution of chloride of soda were used as a disinfectant.

January 17th. Two days after the operation, she had a rigor; pulse 120 to 134, quick and weak; within an hour, the pulse became less frequent; not so weak; skin warmer, and perspiring. This attack was simply miasmatic, induced by the shock

of the operation. Diet generous—oyster soup, soft boiled eggs, etc.

January 20th. Uterus contracted down to less than half the size it was before the operation, the tumor sloughing, and presenting outside of vulva, ligature still attached, and canula coming down with the mass. Upon examination, I find, that as the double-lobed mass passed out of the cavity of the pelvis, having shrunken to a-fourth of its original size, another mass or lobe, two-thirds the size of that ligated, had been expelled from uterus into the cavity of the pelvis, being harder, and less elastic, than the other mass. At the time of the operation, only that part of the tumor that was double-lobed, or the inferior section, (as shown by drawing No. 1,) was ligated, the upper

Before the Operation.

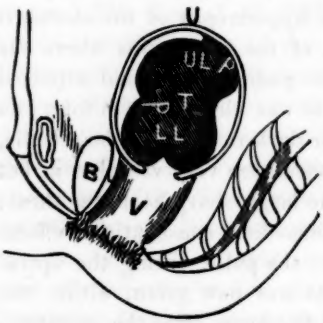

Fig. 1.

U. Uterus. T. Tumor.
B. Bladder. U. L. Upper Lobe.
V. Vagina. L. L. Lower Lobe.
P. Pedicle.

After Lower Lobe had been brought down into cavity of pelvis, by means of the obstretrical forceps, preparatory to ligating the neck of lower lobe.

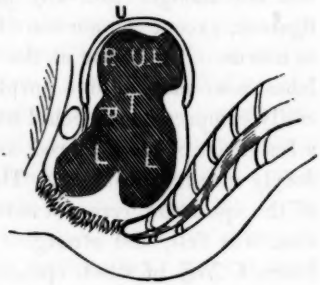

Fig. 2.

U. Uterus. T. Tumor.
U L. Upper Lobe.
L. L. Lower Lobe.
P. Pedicle.

section, or third lobe, not having been brought down out of cavity of uterus, but after the inferior section had sloughed and shrunken, the contractions of the uterus expelled the upper section into cavity of pelvis, and the inferior section, outside the vulva. The inferior, or bi-lobed mass, was now drawn farther out of the vulva, and the neck excised, the ligature having nearly cut through, and the neck of the superior section, or lobe, ligated. It will be seen, (as the drawings show,) that

the tumor consisted of two sections, and two necks, or pedicles, the superior mass being attached by a short, thick, firm pedicle, to the body and fundus of uterus, posteriorally, the inferior section being attached to the lower part of the superior, by a short, thick, less firm pedicle.

After removal of Cerva Lobe.

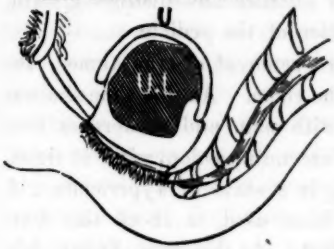

Fig. 3.

U. Uterus.
U. Upper Lobe after the lower was removed.

After Operation was completed.

Fig. 4.

U. Uterus.
P. Pedicle of Tumor.

January 31st. The 11th day from the application, the second ligature became loose, and the superior section of tumor, taken away. The entire mass of the tumor, before it had shrunken, would have weighed three or four pounds.

Immediately after the tumor was removed, I made, with the finger, a careful examination of that part of the pedicle remaining attached to uterus. The neck, or pedicle, was large, nearly or quite two inches in diameter, and having an extensive attachment to the body, and fundus of uterus, commencing at about the junction of cervix with the body, posteriorally, it was attached to posterior wall, forming a long thick ridge, running up to fundus, the limit of the attachment superiorally, I was unable to define clearly, as I was not able to reach to the depth of the uterine cavity. The attachment, inferiorally, was well defined, the pedicle feeling hard and smooth, the ligature having cut through the pedicle at this point within half an inch of the uterine wall; that part of the pedicle above was not so firm and smooth, but not elastic.

It will be seen by the drawings, that the ligature could not have been placed any higher, on account of the manner of the attachment of the pedicle. The considerable portion of the pedicle remaining, composed of uterine and dense cellular tissue, will become atrophied, and gradually disappear; the function of the pedicle, of transmitting blood to the tumor, having ceased, experience has proved that if another tumor occurs, it will be from the development of another and distinct growth, and not from the remaining portion of the pedicle.

The 12th day from the entire removal of the tumor, the patient walked a little around the room. At this time she was taken with a serous diarrhœa, with pain and tenderness over right hypochondriac region and ascending colon, with, at times, nausea, the portal system being in a state of hyperæmia. A great variety of remedies have been used, to check this diarrhœa, but with no permanent effect. At this date, August 6th, it is much better. Notwithstanding she would have a dozen quite copious, thin dejections in the twenty-four hours, she did not emaciate, but steadily gained in flesh and strength, keeping a good appetite; skin warm; veins full. I have, therefore, been led to the opinion that the diarrhœa is vicarious and conservative; that the system having been habituated to a daily drain of blood, or leucorrheal discharge, for years, when that drain was cut off by removal of the tumor, the congestion of the uterine system ceasing suddenly, that of the portal became congested, and took on the habit of depletion, which before was performed by the uterine system. The discharge from the uterus, a few days after the operation, became purulent, and continued in small amount a month. Five weeks from the complete removal of the tumor, the uterus had so lessened in size, that it could not be felt above the pubes; at this time, she had a neuralgic attack of liver, with pain in loins, with a bloody discharge from the uterus, (evidently the menses), which continued in small amount for a week; five weeks later she again had a menstrual discharge, and six weeks later, again; the fourth appearance of the menses did not occur, until seven weeks had passed. In this connection, I may mention, that

during the continuance of the menstrual flow, the diarrhœa is much better, a fact going to show that the serous discharge from the bowels is vicarious.

Having for years been habituated to the use of opium, she finds it difficult to leave it off; in fact, she has had to take it, in order to moderate the discharge from the bowels, but her nervous system still requires, though to a much less degree, the stimulating effect of the drug, feeling weak and chilly when the effect wears off; she is gradually lessening the amount taken. Her general health is more than fair; attends to her domestic duties.

The history of this case shows that the tumor commenced to grow within, or was an outgrowth from the thickness of the uterine walls, and as it increased in size, grew toward the cavity of the womb, for a time having no neck, or pedicle, but as the growth increased, one was gradually formed. At the time of the operation, nature was making abortive attempts at a cure; the uterus, for some time, had been attempting to expel the tumor from its cavity, and had there been no interference, the organ would, eventually, have expelled the mass into the cavity of the pelvis, and, probably, a portion of it beyond the vulva; the softening and disintegration going on at the base of the tumor might, after a time, have extended to the whole of the tumor. The usual way, however, in which nature sometimes effects a cure in this class of fibrous tumors, or polypi, is in stretching and attenuating the pedicle, by the uterine contractions, until it finally gives way, or is snapped off by the violent efforts of the uterus. The prospect of nature effecting a cure by this means, was very doubtful, as the pedicle was so large and firm.

This was a case in which the operation by the ecraseur might have been practiced, and had I appreciated the value of the instrument, as I now do, I should have used it.

SPINAL IRRITATION.

By C. F. Hart, M.D.

Mr. Editor:—Of all the diseases that I have ever met with, this is the most strange; assuming various forms and a variety of symptoms.

June 10th. Was called to see a negro girl, aged 20; pulse slightly accelerated; respiration quick and short; skin soft and moist; tongue slightly furred; complained of pain in left side. When directed to take a full inspiration, there would be a catch, and she complained of sharp pain under the left breast. There was some nausea, and slight hacking cough; bowels constipated; abdomen quite tumefied. Supposing it to be a mild attack of pleurisy, I directed to be given hydrarg. chl. mit. grs. viij., quinia sulph. grs. ij., and if it did not act during the day, to give about sunset, mag. sulph. ℥ss.; mustard poultice over the affected region, to remain until the pain subsided, or it blistered.

To my great surprise, when I called this evening, the pain had shifted to the right side, extending up near the base of the heart; medicine not acted; had vomited once or twice during the day. Directed the mag. sulph. to be repeated, and in two hours after, if it did not operate, to use an enæma of warm water, and apply the mustard over the right side.

11th. The medicine has acted three times during the night, and she feels some better this morning. Pain in the side not troubling her; ate a little toast and drank part of a cup of tea; pulse normal; skin soft; some nausea—for which I directed potassa citras, grs. xx., in solution, every three hours, in a wineglassful of water.

12th. Not so well to-day; had rested badly; vomited several times during the night; pain in the side much worse; no cough; pulse 80; tongue heavily furred; skin moist. I now examined the lungs by oscultation and percussion: could detect no lesions; then the heart, the stomach, liver, spleen, and intestines, not being able to detect any abnormal condition of these organs. I then examined the spine, with the same result. No lesions

could be detected in any of the viscera; the pulse 80—near the natural standard—and had it not been for the vomiting, I should have concluded it was a case of malingerer. Such a thing as a satisfactory diagnosis, to me, was impossible. Could it be hysteria? Directed she should take a tablespoonful of aqua cal. in same quantity of sweet milk during the day.

13th. No better; vomiting continues; pain in the chest more acute. Directed a cantharides plaster, 8x12 in., and continue cal. aqua as before. *7 o'clock P.M.* Blister drawn well; vomiting checked. Directed quinia sulph. extr. hyos., āā, gr. j., every hour, tinc. assafœ. ℥j. every three hours.

14th. Rested well last night; took three doses of quin. and hyos., and two of assafœ.; some nausea this morning; continue quin., hyos., assa., also aqua cal. if necessary; blister nearly dry.

15th. No change; blister dry.

16th. Worse. Symptoms all returned in a more aggravated form; pulse 70; tongue heavily coated; bowels not moved for two days. Gave C. O. salts ℥ss., to be repeated in four hours if necessary; potassa citras grs. xx., in solution, every three hours; mustard poultice to the stomach; made another examination of thorax, bowels, and spine, but could make no farther discovery.

17th. No better; vomiting continues; extremities cold; bowels not moved. Gave enæma, with instructions to bathe the extremities with mustard and warm water; continue former treatment. *8 o'clock P.M.* Bowels moved freely; no change in other symptoms; continue treatment.

18th. No better; rested badly through the night; vomiting continues; extremities cold; pulse 60, and feeble. Ordered ammonia carb. grs. ij., in aqua ℥j. lavender spts. comp., ℥ss., every hour; hydrarg. chl. mit., grs. iv., and repeat in five hours; bathe the extremities and over the liver and stomach with nitro muriatic acid; reapply the blister to the chest. The vomited matter is like the white of an egg, and very sour.

19th. Rested better during the night; vomited but twice since yesterday morning; medicine had operated well before

night; continue ammonia and lavender comp. spts. every two hours.

20th. No improvement.

21st. Same.

22d and 23d. The same; no perceptible change.

24th. Worse.

25th. Worse.

26th. Worse; to-day, her appetite has entirely failed, indeed there is rather a loathing for food; everything in the way of nourishment causes vomiting. I now insisted on having consultation. The former family physician was sent for, and from him I learned the following facts:—She was a twin sister, had been very delicate from infancy; when one was taken sick, the other would be in the course of from twelve to twenty-four hours after, and both exactly alike; her sister had four years before died with a similar disease to what she was then suffering with, and for several days after, they thought this one would die. The Dr. thought they had probably been poisoned; he now examined the patient very carefully, as I had done before, the thorax, abdomen, and spine, with the same result, (and he was the finest diagnostician that I have ever met with.) I now told him what had been done for her, and how long she had been sick; he thought all had been done that could be, and continued the same treatment and change with the symptoms.

27th. No improvement; a loathing for food. Directed essence of beef, tablespoonful every two or three hours, also egg and brandy; changed the carb. for the valerinated tinc. of ammonia; the other treatment the same.

28th. Gradually sinking.

29th, 30th, and 31st. The same; told her mistress we could do nothing more, and that she would certainly die in a short time—the Dr. ceasing to visit her from to-day.

July 1st. No improvement perceptible.

2d. Symptoms slightly modified. I again examined her in the same way as before, and this time found, over the third cervical and third dorsal vertebra, some slight tenderness. I dry cupped her from the head to the sacrum, both sides of the spine.

3d. Probably some better; took about ℥vj. blood from over the third dorsal vertebra.

4th. Improving; vomiting ceased; free of pain; taken some panada to-day.

5th. Not so well; nausea returned. Directed a cantharides plaster to be applied to the spine, from the head down to the lower margin of the scapula.

6th. Blister drawn badly; rested better than usual; is probably better.

7th. Doing tolerably well to-day.

8th. Blister dried; does not feel so well.

9th. Worse.

10th. Pains returned, with vomiting; reapplied blister plaster, and continue ammo. valer. tinc.

11th. Better; neither pain or vomiting; blister drawn well; sprinkled with quin. sulph. grs. v., to keep it running; put her on tonic, ferri chl. tinc. and quassia infusion.

12th. Improving; continue tonic.

13th, 14th, and 15th. Improving, and continued to do so until recovery was complete.

1863—February 9th. She was again attacked in the same way, but having the key to her disease, it was not so unmanageable; blistered the spine freely, and continued the same treatment as before, and it yielded in five or six days.

1864—In June. She was again attacked, this time very mild, and only lasted her three or four days, and has had excellent health from that time until last August, since which time I have not heard of her. The singularity of the case is its great obscurity, there having been some half dozen or more thorough examinations, and the disease had lasted nearly a month before the least symptom of disease of the spine could be detected.

OPIUM AND BELLADONNA.

By James T. Neuman, M.D.

Materia medica has long since taught me that belladona and opium were antagonistic to each other. It has never been

my lot, until within a few months past, to test the antagonistic virtues of these powerful medicines.

Case I. On the 6th of July, 1867, I was called to see a young woman who had taken an ounce of laudanum, as she afterwards confessed, with suicidal intention. I found her insensible, and the pupils contracted. I ordered some strong coffee to be given her. She drank two cupsfull. I had written a prescription for an emetic:—℞. Ipecacuanha, gr. xij, tartarized antimony, gr. ij. M. Upon its arrival, I administered it to her. In a few minutes she vomited copiously. The ejecta were strongly odorized with opium. She still remained in a state of profound stupor. It then occurred to me to try the belladona. I dispatched a man with a prescription which called for one-half ounce of the tincture of belladona, and nine grains of the solid extract. I immediately exhibited a teaspoonful of the tincture: waited twenty minutes and repeated the dose. At the expiration of twenty minutes more, I followed it up with three grains of the solid extract. In the course of two hours, she became sensible, but could not see, and complained of her eyes hurting her. When I left, I told the attendant to give three grains more of the solid extract. The next morning, when I stepped in to see her, the pupils were natural, and sight perfectly restored.

Case II. A nymph du pave, who had been in the habit of buying morphia, by the bottle, of a druggist just opposite my office; I have, on several occasions, seen her buy sixteen grains, pour it in the palm of her hand, and swallow it with a gusto that would astonish you.

Now, to the case in question. The quantity of morphia that she took, I am unable to determine, but it must have been very great. When I was called in, I found her in a comatose condition; stertorous breathing; small, feeble pulse; pupils contracted; jaws firmly set; extremities cold. Not one drop of liquid could I force down her throat. Here I was in a dilemma. I had every reason to believe that it was morphia she had taken, but what I could do, I could not use the belladonna, because she would not swallow. Must this woman die? *No;* science comes

to my aid, in the shape of the hypodermic syringe and atropine, the active principle of the belladonna, in a small space. Now, I have it. I walked over to the store, and ordered the clerk to weigh me out two grains of atropia sulphas, and then add one ounce of water. I went back, took out my syringe, which holds about three drachms, rolled up the patient's sleeve above the elbow, inserted the point beneath the skin, and injected the fluid into the parts. I waited twenty minutes, and applied the syringe to a fresh part. At the expiration of a-half hour, I again used the syringe. By this time, she became somewhat conscious; I then ordered six grains of the solid extract of belladonna to be divided in two parts, one to be given every two hours. She also, like case first, complained of her eyes, and could not discern a single object for about eighteen hours. At the expiration of that time, the pupils assumed their natural appearance, and vision was restored.

Pardon me if I trespass upon your valuable space, as I have still another case to report:

Case III. Mr. B. had in his employ an Irish nurse girl, and to whom he entrusted his child—a bright boy of two years. On the evening of the 4th of September, 1867, she requested leave of absence from him, his wife not being at home. He told her that she might go if she could get the child asleep. Living close by a drug store, she ran off and bought ten cents worth of laudanum, and gave the child a teaspoonful, sat down, and it was soon asleep; and in all human probability, it might have slept forever, had not the father been drawn to his child by some unknown power. He found it breathing very little, and with a pulse scarcely distinguishable.

He sent his man servant after me in great haste. I found the little sufferer's days were numbered, if it was not relieved soon. I ordered it to be stripped, and ice applied to the spine. As soon as I got it, I gave it six drops of the tincture of belladonna every ten minutes for an hour and a-half. At the end of that time, I had the pleasure of hearing the little fellow call for his papa.

Thanks to belladonna! it cheats death of his victim, and

causes the rash hand that attempts self-destruction to repent the act.

A PAPER READ BEFORE THE CHICAGO MEDICAL SOCIETY.

By HIRAM WANZER, M.D., Chicago, Ill.

Mr. President and Gentlemen:—The subject of this paper is the therapeutical advantage of *position* in the treatment of shock from concussion of the brain, and I wish to report a case successfully treated by it.

During the past six years' residence in the West Division of our City, I have frequently been called to cases of traumatic injuries of the head. A few have succumbed to the shock without reaction, and, I apprehend, could we have had a clearer knowledge of our therapeutic agents, death might frequently have been postponed, and the fatal issue prevented. Since the suggestion made here by Dr. Orren Smith, to give the patient the advantage of *position*, I have tried it in three cases, two of which were of most desperate character, with the satisfaction of witnessing the recovery of them all. I can bear testimony to its priceless value. I believe the practice of surgery ought, and soon will be, revolutionized in the treatment of shock from concussion of the brain. Authors have not only failed to give, to my satisfaction, a clear and comprehensive idea of the pathological condition in concussion, occurring in the ordinary accidents of civil life, and, to me, their treatment is equally meagre and unsatifactory. I have been led to regard all injuries about the brain with significance. It was justly said, by Robert Liston, that no injury about the head was too trivial to be despised. It matters not whether the physical leison is well defined. Such as fracture of the cranium, with or without compression of the brain, by bone or blood-clot. Where there is much shock, or comatose symptoms, the organic contractility of the heart is enfeebled, if not nearly suspended. We find in this state of things, *position*, not only always indicated, but frequently the sheet-anchor upon which our patient may cling to

the bark of life. This was exemplified among soldiers who fell in battle in our army. Those falling upon hill sides, with the head and shoulders dependent, usually recovered; those who fell with them elevated, frequently died.

The most prominent symptoms I have witnessed, in severe concussion of the brain are, general pallor, coldness, and anæsthesia of the surface of the body; insensibility of the organs of special sensation; the glassy eye usually does not respond to light; the ear may be deaf to sound; the organs of taste, touch, speech, and deglutition, obtunded, or nearly suspended, in proportion to the lesion to the brain and nerve centres. The heart's action is invariably feeble. The pulse, if it has not already forsaken the wrist, indicates the diminished contractile energy of the heart to carry the blood to the brain and extremities, and, without speedy help, our patient is soon beyond the surgeon's skill.

Having repeatedly witnessed the insufficient action of remedies in the treatment of shock, my practice has not only become radically changed, but, I believe, based upon more physiological and rational principles. Our most certain means are always at hand, and if early resorted to, will generally extricate our patient from impending death. The *rationale* of treatment is precisely the same that we would adopt in the parturient woman, suffering from uterine hemorrhage: first, to restore as speedily as possible, to the brain, its lost stimulus, by *position*, placing our patient at an angle of forty-five degrees, with the hips elevated and the head dependent. By this method, the emptied vessels of the brain are refilled, the heart soon responds to the reflex nervous influence; its motion and rhythm reëstablished; the forsaken pulse returns to the wrist with force and volume. Thus does the brain minister to organic action when it has its accustomed supply.

There are other collateral, but auxilliary therapeutic agents, that now come to his relief, some of which I will mention. In cases of profound shock to the nervous system, the patient is usually incapacitated from swallowing, and the measures I have adopted are to give remedies by enema, in liquid form, first

placing our patient in *position*, hot epithems are applied to the extremities, and from one-half to one ounce of brandy, with five grains gum camphor, diluted with a small quantity of water, are thrown into the rectum, repeated, if necessary, at intervals of half an hour, according to the exigency of the case. As soon as the heart's action become more vigorous, and the pulse returns at the wrist, with moderate force and fulness, with the capiliary circulation established, the head and shoulders are slightly elevated. He is continued in this *position* until some degree of consciousness is restored, when he is placed in the recumbent posture, resuming the former *position*, upon the first approach to fatal syncope, indicated by the flagging pulse and diminution of the heart's action. This I found necessary to resort to in one case, to the salvation of my patient. A valuable adjuvant in the treatment, are jets of cold water, thrown with the fingers into the face, assisted by smelling salts, which stimulate the trifacial nerve.

I have tested the value of the above methods of treatment in three cases, as before stated, who would have perished under previous methods I have seen adopted.

I believe, in the treatment of shock, narcotics are seldom if ever indicated. They not only diminish the vital powers, obtund and paralyze nerve sensibility, and enfeeble the energies of the *tripod of life*, but they deprive our patient of *pain*, a natural stimulant and excitor to organic action, in the beginning reaction. The true indications of treatment are, first, to restore the wasted energies of the brain and nerves centre, from whence organic action emanates by *position*. Second, diffusible stimulants, medicines that exalt the vital actions of the economy, combined or alternated with beef essence.

The case of traumatic injury of the head, I wish to report this evening, was Cornelius Daily, native of Ireland, aged 22. I was summoned to him May 17th, last, at 8 A.M. Before my arrival at the scene of excitement, I was met by a messenger, who stated that the man was dead, but hastening to the spot, I found the patient lying upon the ground. He had been struck upon the left side of the head by the fall of a timber weighing

some 200 lbs. The wound was contused, and extended from the zygoma to the mastoid process of the temporal bone. The lobule of the ear was also divided. There was a large quantity of dark coagulated blood upon the ground where he was lying, which had issued from his mouth, nose, and ears. Upon examination, I found the surface of the body cold. The eye was glassy, and did not respond to light. There was no pulse at the wrist. With the exception of an indistinct tremor of the heart, no defined sound being audible, life was apparently extinct. An assistant now seized the hips of the patient, elevating them considerably, leaving the head down. In about ten minutes, the heart's action became more perceptible, and distinct. Two planks were now arranged at an angle of forty-five degrees, and the patient placed upon them with the head and shoulders dependent. As soon as he was placed in *position*, nearly a pint of dark coagulated blood issued from the mouth, nose, and ears. In about fifteen minutes, the pulse returned to the wrist. The contractile energy of the heart was more manifest. The gentle glow of the surface indicated the beginning return of the capillary circulation. Cold water was now dashed upon the face, alternated by jets with the fingers. We found this of inestimable value in the treatment. Believing that he would fully react, the divided ear was coaptated by several interrupted sutures. He was continued in *position*, about thirty minutes longer, when the heart's action and pulse became quite vigorous, with a more marked capillary circulation. He was now removed to the warehouse of Messrs. S. S. Williamson & Co., and placed in nearly the same *position*, the head and shoulders being slightly elevated. Upon his arrival there he vomited a quantity of dark grumous blood, which somewhat increased his prostration. Hot epithems were now applied to the extremeties. The body was enveloped in hot flannel blankets; an enema of half an ounce of spirits vini. gallicis, with five grains gum camphor, diluted with a small quantity of water, was thrown into the rectum. This was repeated every hour during the forenoon. In the afternoon, consciousness, sight, speech, and deglutition partially returned; but reaction had been somewhat retarded

by *paroxysms* of vomiting, which consisted of the fluids he had drank, mingled with blood. This was relieved by acid gallici, giving five grains after each effort at vomiting. At 7 P.M., a more comfortable reaction was established. He had slept considerably during the afternoon. His breathing was noisy and stertorous; had two fecal evacuations; the surface of the body was about the normal temperature. As there was now but little difficulty in deglutition, the enemas were omitted, and he was ordered for the night, every three hours, two grains gum camphor, alternated with beef essence.

The 18th, at 7 A.M. The patient had enjoyed a few hours of refreshing sleep; there had been less stertor; the mind was more clear. He had been annoyed considerably by thirst, which I ascribed to the excessive loss of blood. He had several fecal discharges during the night. There was no change in the treatment during his sojourn there, but simply to continue *position*, the external warmth, and the beef essence. He was removed to the City Hospital in an ambulance at 3 P.M., and to the very kind and skilful treatment of the Surgical Staff of that institution, he owes much to, and for, his recovery. I will now read the Hospital Report from the time of his admission there:—

Cornelius Daily, *æt* 22 years; a native of Ireland; stature, a little less than medium. While engaged as a laborer, assisting in the removal of some machinery off the cars, was felled to the ground by a blow from a heavy piece of timber, on the left side of the head, immediately over the ear.

There soon followed copious hemorrhage from the nares and ears, when he afterwards lay comatose, completely insensible, for several hours.

On May 18th, the first succeeding day of his injury, he was admitted into Cook County Hospital presenting the following symptoms:—

Although he answered interrogatories with seeming correctness, he still exhibited a mental lethargy often seen in patients semi-comatose. He was unable to maintain the erect posture, either in sitting or standing, and when placed in bed, kept, without moving, as perfect dorsal decubitus, as if wholly paralyzed,

but when requested to move, there was no apparent difficulty or disparity in the natural mobility of any extremity.

The face gives evidence of recent severe contusion, extending from the left eye to the ear of the same side. The nasal and aural canals were filled with clotted blood; the pinna of the left ear was lacerated, and had been dressed with sutures. The right pupil was normal, the left, moderately dilated, sphincters enjoying their usual tonicity; bowels constipated.

He slept during the first forty-eight hours almost continually; ate but sparingly of anything. About the fourth day the external recti muscles were seen to be paralyzed on both sides. The left cornea perfectly anæsthetized, and the sensation of the right markedly obtuse. The conjunctiva of both sides exhibited deficient sensation; the left exceeding in degree. With the instillation of a drop of a four grain solution of atropia sulph., ready dilation of both pupils followed.

Both corneæ had now begun to ulcerate. The ulcer on the right progressed but slightly, but the left proceeded to perforation and evacuation of the anterior chamber entirely, as was evinced by the perfect approximation of the iris and inner wall of the cornea.

The treatment consisted in keeping both pupils persistently dilated, simultaneously sealing the left eye-lids with isinglass plaster, as the lower palpebræ drooped, so as to leave the eye continually open. The paralysis involved all the muscles of the left side of the face, with the loss of the sense of taste over the left half of the tongue; also, convergent strabismus of both eyes. The corneal ulcers healed steadily under the treatment employed, and as they cicatrized, the anæsthesia diminished. The perforation of the left cornea soon closed, and a new secretion of aqueous humor restored its original convexity. He was transferred to the eye and ear wards, June 19th, 1867, having, at the time, a purulent discharge from the left ear, with inflammation of the conjunctiva of the corresponding eye, kept up by the lost tone in the orbicularis, which exposes the unprotected mucous surface to the atmosphere. Under appropriate treatment and cleanliness, the ear has ceased to suppurate; the left

eye is less inflamed, the right being entirely well. Both eyes are thoroughly strabismic; but very recently, there is a manifest return of motion to the external rectus of the left. The facial paralysis of this side remains still the same, while the arm and leg of the opposite half of the body exhibit deficient nerve power.

Foreign Correspondence.

EXTRACTS FROM A PRIVATE LETTER FROM PROF. FREER, DATED STUTTGART, SEPT. 13th, 1867.

DEAR DOCTOR:

The International Medical Congress assembled, according to programme, on the 16th of August, A.D. 1867, at the old L'Ecole de Médicin. At least 700 or 800 delegates were present at the opening exercises. The hall is miserable for such purposes—shaped very much like a well-developed clamshell. The officers and privileged characters occupied the hinge part, while the audience were packed, in what was left, on benches without backs, and dirty as an American college near the close of a winter session. Prof. Bouillaud, in his little welcoming address, acknowledged themselves apprentices in the art of entertaining their medical brethren, at least, compared with their friends over the water. I would not have disputed him on any account, for they could, at least, in that great city have obtained a better hall. Nevertheless, most of the members seemed to take things good-naturedly, and tucking their bifurcated coat-tails under their arms, patiently committed their noble bottoms to the merciless embrace of unyielding oaken planks, in order to witness rare equestrian feats of old and practiced "hobby-horse riders." These exhibitors have become so skilled, and have their horses so well in hand, that they can sail between the narrow boundaries which serve to separate "tweedle-dee from tweedle-dum," without grazing a stirrup. A Broadway omnibus-driver would have been struck dumb with admiration and envy. *Vide* the papers and discussions on the

anatomy, physiology, and pathology of tubercle. The transactions will be published *in extenso*, undoubtedly, when, most likely, one may be able to make some profitable gleanings.

The question of proposing to the various civilized governments some efficacious measures for restraining the propagation of venereal maladies, excited sharp debates, and much ill-natured criticism. There occurred some very lively repartee on the value and propriety of syphilization, between Ricord and Auzeas Turenne, the latter being a firm advocate of its efficacy, but has contented his zeal by practising upon others instead of himself, which is looked upon by Ricord as the *experimentum crucis* of a man's faith in his doctrines. Whether this prophylactic measure has any intrinsic merit or not, it certainly received very little favor at the hands of the Congress, and the spirit manifested by the opposition was rather that of prejudice than fair dealing with a weighty scientific problem, but its advocates seem to be possessed of the true martyr spirit, and bared their devoted heads to the showers of ridicule and ill-natured criticism, with an air of resignation which would have been creditable to the persecuted saints of olden time.

By the way, Ricord appears and acts enough like Governor Evans, formerly Professor of Obstetrics in Rush Medical College, to be taken for a twin brother. This is no disparagement to the Governor, for I count myself as one of his admirers.

You will find in those numbers of the *Gazette des Hopitaux* that I have sent you, two papers on the subject of preserving anatomical specimens, which are, probably, of much value. I saw a preparation by the Phenique acid method, which was perfectly pliable, and plump as a recent dissection, even the small joints of the fingers were as flexible as in the most recent state, and at the same time, the specimen—which was a well-dissected arm—was as dry as leather, and without odor, other than from the acid, which is not at all disagreeable. This is something worth looking into—if the acid is not too expensive, the method is invaluable for medical colleges. The process by tannic acid must be very tedious and expensive.

Our French hosts gave one entertainment, as you will ob-

serve by the toasts and speeches which you will find reported. I did not attend, on account of a slight indisposition.

I visited the hospitals, Hotel Dieu, Pitie, and others. In the first named, is the celebrated Maisonnueve, whom I followed through a morning clinic. He is, as you are probably aware, outside the faculty, having no other position than his hospital appointment; but this is enough, and just suits his genius, for being a progressive as well as "fighting man," it gives him an opportunity to deal his blows impartially, right and left, and he does not fail to embrace the opportunity, by animadversion and trenchant criticism on the doings and teachings of his confréres. His figure, features, and physiognomy reminds one of an educated, demonstrative Irishman.

In Paris, Phenique acid is, at present, king over all other remedial agents, and, as a surgical dressing, is particularly so with Maisonneuve. Charpie, saturated with a solution of this acid, is applied to every breach of continuity of surface by this doughty professor, and with the assurance in his teachings that it obviates nearly all the secondary surgical accidents. A tin wash-dish containing the inevitable embrocation, is a conspicuous object at every bedside, and by the side a small stack of charpie, from which, as he arrives, he snatches a handful, dabs it in the solution, and, with a vigorous hand, slashes it on to every variety of diseased or abraded surface, from vulva to remotest parts. He does not attempt union by "first intention," and this is true of all the Paris surgeons at the present time. It is taught that the open wound is less likely to lead to purulent infection and kindred surgical accidents. Hotel Dieu is an immense structure, and so well kept that it is the very paragon of neatness and order.

At the Pitie, we find Désormeaux. His clinics are well attended and very popular. His hobby is, as you are aware, the endoscope. I had the pleasure of looking through it many times, as he is very obliging, and takes great pleasure in giving ample explanations of the method of using it. In his hands, it certainly performs all that has been claimed, and reveals the bladder and urinary passages wonderfully well. It must soon be an indispensable appendage to every surgeon's armament.

Desmarres' eye clinic is a clinical curiosity rather than a means of instruction. I will not attempt to estimate the numbers in waiting, but during an hour's time, he disposed of at least one per minute. His secretary was obliged to write a race in order to keep pace with his off-hand declarations of diagnosis, prognosis, treatment, etc. Those requiring the use of the ophthalmoscope are turned off to an adjoining room, for future consideration.

Laskowski is the rising man in this department of surgery. Although, as yet, the number of patients is rather limited, yet his clinic is very valuable, because of his zeal and ability as a teacher. His ophthalmoscope is, probably, the most perfect and convenient in use. The most unskilful can use it with perfect facility.

I started one morning, bright and early, to pay a visit to the venerable Velpeau's clinic, but, alas, he was dead (the news of which must have reached you long since). His funeral took place that very morning, so I attended that instead of the clinic. The ceremonies were of the most imposing character, for he died laden with honors and riches. "*Requiescat in pace.*"

Velpeau's museum occupied considerable of my time, as I was not only deeply interested in the specimens of pathology, but wished to learn something of the method of getting up and arranging such affairs. Much of it is simple and easy of accomplishment.

I am under special obligations to my friend, Dr. Bosworth, for much that I saw, as he has been on the ground several years, and is, consequently, well posted. I will have occasion to speak of him again on my return. I saw ——— ———, "formerly of Michigan," at the Congress, but did not have a chance to meet him, as he occupied the opposite side of the hall. He looked very happy and motherly, cheered when others did, and listened as attentively as though he understood it all.

By the way, Bosworth has promised to write for our journal, you may expect a paper for your next number. He is liberally educated and thoroughly posted in the profession, so I think you will get something from him to your liking. He has been

a most faithful follower of the clinics in Paris these three years, as shown by his documents and notes.

Regarding the sanitary arrangements of Paris, we might take valuable lessons in some things, and they of us in others. We, of them, respecting urinals in public places, for every prominent object in this great city is considered a proper mark for a suffering bladder. A Frenchman can no more forbear wetting everything that projects than an American dog, and that irrespective of time, place, and surroundings. This arrangement gives a delightful odor of ammonia, which, you know, is an antidote for fainting; and I have noticed that the ladies do not faint there, even at the sight of these mictatorial exploits.

Another arrangement, for the protection and bestowal of unclaimed babies, may be worth copying. These consist of little round structures, situated on the public streets, with a porthole-like arrangement on one side, as a place of deposit. The shelf which recieves the "waif" appertains to a revolving arrangement on the inner side, which is at once turned by an unseen hand half around, where it (the baby) is received and transported to the hospital for foundlings. This arrangement became necessary for the prevention of the crime of infanticide. As the depositor is never seen, this method must address itself to them as preferable to child-murder. I need not mention the legalization of prostitution, as another sanitary arrangement.

I am afraid I have already written more than you will have the patience to read, so please present my regards to the Faculty, and other friends. Fraternally yours,

J. W. FREER.

Prof. J. ADAMS ALLEN.

Editorial.

The Next Volume.

On and after the 1st January, ensuing, the JOURNAL will be issued semi-monthly, at the uniform rate of *Three Dollars* a year in advance, or *Four Dollars* after six months. Each No.

will contain thirty-two pages, thus adding sixteen pages to the month, or one hundred and ninety-two to the volume. Regular correspondents have been engaged in Paris, Vienna, New York, and Philadelphia, who will keep our readers "posted" on all matters of medical news and advance. The increased number of pages will afford space which has been sorely needed for abstracts of valuable articles as they appear in other medical periodicals, book notices, etc. A series of papers, prepared by the Editor, will give an outline of the present condition of General Pathology and Therapeutics. In this series, an effort will be made to condense the subject, so far as possible, to aphorisms.

A large number of valuable communications are now on file for publication, and will appear as space will permit. All matters of local professional interest will be duly chronicled.

Briefly, the Editor has made arrangements, whereby he will be enabled to devote a large share of his time to the preparation of a journal which he trusts will meet with the continued favor and confidence of the profession. For the large additions already made to the subscription list since his return to the editorial chair, and their numerous and valuable communications, he returns sincere thanks.

Cliniques at Rush College.

A large number of capital operations have already been performed before the medical class at the College. At the last clinic, Prof. Gunn removed, from the bladder, ten distinct large calculi. The patient, a young man, 20 years of age, is doing well. It is expected that details will be given soon.

The advantages furnished by this city, for clinical teaching, are being taken possession of in earnest, and will be developed to their uttermost.

The Dispensary is open daily, for gratuitous treatment (both medical and surgical) of those whose circumstances will not permit large pecuniary expenditure.

BOOKS RECEIVED.

The Practice of Medicine and Surgery, Applied to the Diseases

and Accidents incident to Women. By WM. H. BYFORD, A.M., M.D., author of "A Treatise on the Chronic Inflammation and Displacements of the Unimpregnated Uterus;" and Professor of Obstetrics and Diseases of Women and Children in the Chicago Medical College. Second edition, enlarged. Philadelphia: Lindsay & Blakiston. 1867.

A Biennial Retrospect of Medicine, Surgery, and their Allied Sciences. Edited by Mr. H. POWER, Dr. ANSTIE, Mr. HOLMES, Mr. THOMAS WINDSOR, Dr. BARNES, and Dr. C. HILTON FAGGE, for the New Sydenham Society. Philadelphia: Lindsay & Blakiston. 1867.

Inhalation, its Therapeutics and Practice: A Treatise on the Inhalation of Gases, Vapors, Nebulized Fluids, and Powders, including a description of the Apparatus employed, and a record of numerous experiments, physiological and pathological, with cases. By J. SOLIS COHEN, M.D. Illustrated. Philadelphia: Lindsay & Blakiston. 1867.

Studies in Pathology and Therapeutics. By SAMUEL HENRY DICKSON, M.D., LL.D., Professor of Practice of Physic in Jefferson Medical College, Philadelphia, etc. New York: Wm. Wood & Co., 61 Walker St. 1867.

Headaches: Their Causes and Their Cure. By HENRY G. WRIGHT, M.D., M.R.C.S.L., L.S.A., Member of the Royal College of Physicians of England, etc., etc. From the fourth London edition. Philadelphia: Lindsay & Blakiston. 1867.

Epidemic Meningitis, or Cerebro-Spinal Meningitis. By ALFRED STILLE, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine in the University of Pennsylvania, etc. Philadelphia: Lindsay & Blakiston. 1867.

Hufeland's Art of Prolonging Life. Edited by ERASMUS WILSON, F.R.S., author of "A System of Human Anatomy," Diseases of the Skin, etc. From the last London edition. Philadelphia: Lindsay & Blakiston. 1867.

Circular No. 7. War Department, Surgeon-General's Office, Washington, July 1st, 1867. A Report on Amputations at the Hip-Joint in Military Surgery. Washington: Government Printing Office. 1867.

(*Continued from page 464.*)

the autopsy. In the other parts, the pus which could not be washed away by the injections hides from you the state of the membrane; but the presence of this purulent layer, which we also cannot detach from the end of the sound, is already a proof of the ulceration of the bladder, and a lesion very grave upon its surface.

Before quitting this subject I will call your attention to a patient which we have lately examined. From his entrance he presented already some time since, some symptoms of cystitis; the micturition was accompanied and, above all, followed by pains; the urine contained pus; and he had had a little hematuria. We suspected a calculus, but the sound did not show any foreign body. The endoscope showed us the vesical membrane of a deep red, surrounded by an abundant network of vessels of a more lively red, the border of the prostate was red; but that which was most notable, was a development of round red points, larger than granulations and more regular than flesh buds. I had some difficulty to satisfy myself in regard to these growths, however, their appearance leads me to suppose that they are simply inflammatory.

The following confirms this diagnosis, for after some time of repose, from baths and antiphlogistic treatment, all the symptoms disappeared, and then, on a last endoscopic examination, the bladder and the prostate had recovered their normal appearance; the prostate, in particular, had again become smooth and even, as in its natural state.

We have already had occasion to speak of the engorgement of the prostate, and also of urethral ulcerations, which are sometimes the cause, but we have said nothing of the endoscopic character of the swelling which follows.

The engorged prostate can acquire a considerable volume; and, as you know, makes a lump in the cavity of the bladder. Its volume can be appreciated by the depth to which it is necessary to pass the sound, in order to penetrate into the organ and touch it through the rectum; its prominence in the bladder and its measure, with sufficient precision, may be known by means

of the catheter of M. Mercier, but through the endoscope we can sometimes know more, the disposition of it. A first particularity which strikes the observer is, that, in withdrawing the sound, instead of seeing the border of the prostate rise gradually into the field of the instrument, it follows the surface of the glass in the form of a curtain; we see it from the bottom to the top, formed at the end of the instrument, like the action of the sucker of a pump, it relieves itself after being pressed. If the instrument rests upon the middle portion of the lobe, which was thus placed before the sound, it turns from behind and appears difficult to free the passage. It seems like a cover or lid which appears to shut upon itself and raises itself. When we have seen this appearance it is impossible to confound it with the normal state.

Whilst afterwards following the contour of the vesical orifice, we find that its inferior part, in place of a crescent with a superior cavity, presents a convex line towards the top, and, in thus following the border of the middle lobe, where the prominence is situated which it forms in the bladder, the middle lobe, engorged, offers, in general, a contour uniformly round, whilst it is not an organic affection. However, upon a patient who had been operated on several times, by a section of the prostatic valvule, and who had had an abscess of the prostate opening into the bladder, I have found an irregular prominence with deep holes, which resembled a hard damaged substance, which the organ had formed in the hypertrophied lobe by the cicatrization of the abscess.

Since the time that I have applied myself to the endoscope, I have not had the occasion to apply it to tumors of the bladder, properly so-called; but, finally, we had in our wards two cases of cancerous degeneracy of this organ and of the prostate. These two patients had experienced dysuria, and had entered into the hospital because they had been seized with complete retention; their urine was very turbid, and they had considerable hematuria, particularly one of them. Rest and treatment had mitigated the pains of the retention, and then certain specific pains manifested themselves, which, above all, had sometimes a

freely lancinating character. Upon one of these patients, the sound had not detected any tumor, only it sunk very deeply before it arrived in the vesical cavity. On examining with the endoscope, it was impossible to perceive the border of the prostate and the orifice of the urethra, it was found that only one surface continued itself from the prostate to the "bas-fond" of the bladder, and passing up very high into the organ; this surface, of a yellowish white, with the vessels sufficiently developed, formed nipples, large and very prominent, and presented at a place ecchymoses of a deep red, which had all the appearance of an encephaloid mass. It appeared to form a large prominence badly confined or limited, in a manner, although the sound not being well free in the bladder, could not exactly circumscribe a tumor. Upon the other patient, catheterism did not discover anything in the bladder, except some inequalities, which were situated around the fleshy columns; but at the neck there was found, by the aid of the endoscope, a prominence, considerably large, of the middle lobe of the prostate; you have seen all the observable face of the bladder strewn with soft vegetations, of a reddish yellow, forming small teats or nipples, and presenting the same aspect and coloration of encephaloid vegetations. The prostate makes an inconsiderable prominence in the bladder, it is true, but presenting the same aspects as in the vesical wall.

The sediment in the urine of these patients, and examined by the microscope, contains, besides globules of pus, great nut-like cellules, which presented the character of cancerous cellules. These cellules were very numerous in the urine of the second patient.

The group of symptoms and, above all, their persistence, the cachectic appearance which these patients had acquired by degrees, then likewise as the local symptoms appeared a little calm, and the microscopic examination of the urine could give some strong presumptions; but without the endoscope, there is but little degree of certainty in the diagnosis, and I wish you to notice that this diagnosis had been made in the two cases, after the results of the endoscopic examination, before the

symptoms had furnished suspicion of the nature of the evil, and whilst the tint of the skin did not yet betray the development of the cachexia.

If we consider how few means we have in order to assure ourselves of the nature of a tumor, which the sound has reconnoitred in the bladder, how little certitude of differential signs of these tumors between themselves, so much so that the cachexia is not evident, and with danger of attack from a cancer which we cannot completely destroy; we are really astonished at the hardihood of deciding either for the ecraseur or for the "arracheur."

You will be convinced, I think, that the endoscope has already rendered a grand service to the surgeon and the patient, if it prevents the performing an operation on a cancer, of which the result must be a speedy death.

It rests with us to speak to you, gentlemen, of an alteration which is the consequence, for the most part, of affections of this viscera. You know that whilst the bladder empties itself with difficulty, in consequence of some obstacle in the course of the urine, it happens, about a certain time, that the bundle of muscular tunic becomes hypertrophied and makes a prominence upon the internal surface of the organ, the mucous membrane being enfolded in their intervals, and from it results that we call "bladders with columns," and "bladders with cellules."

In this case, these columns hinder the ordinary catheter, whilst its point passes on the mucous membrane, giving the sensation of prominences which it meets, but it is necessary for this that the columns be already sufficiently voluminous; but, still further, other prominences can be diagnosed in the bladder, from tumors, from cancerous vegetations, or otherwise, also this—mistakes are not very rare, and we arrive at the belief, from columns in the smooth bladder, of mistaking columns for tumors, and reciprocally.

The endoscope enables us to avoid these errors, and, therefore, they have become more rare; it shows the columns under the form of "cordons arrondes," as you see them in the autop-

sies, with their more salient points very clear, and the adjoining parts in the shade. Whilst these prominences are large, their two borders do not show themselves simultaneously in the field of the instrument, and it becomes necessary from small movements to measure the larger. It is easy to follow in the way of their length, and then we see them united, then divide themselves, intercepted between them some depressions in the mucous membrane or the veritable cellules.

Whilst we can thus reconnoitre their form, it will be impossible to confound them with any other thing, so much the more as they present the general color of the mucous, whether it be sound or inflamed, and which is not the same, frequently, of tumors, which have in the bladder, as elsewhere, their particular coloration.

We will terminate this exposition of the results of the endoscopic examination of the urinary passages, by leading you to a knowledge of the means which can be taken for the exploration of the vesical calculi. In order that this exploration may succeed, it becomes necessary to direct the axis of the instrument in the direction of the foreign body. As soon as this condition is obtained, it is easy to verify the color of the calculus, and, from certain movements, to reconnoitre the aspect of its surface, its smoothness, its nipple-like prominences, irregularities, or unevenness, if we carry the end of the sound upon the contour of the calculus, or can get an exact idea of its form, and likewise appreciate sufficiently well its volume; however, for persons who have not yet the proper arrangement of the instrument, the dimensions of the object appear, frequently, a little larger than they really are. But this error is very far from attaining the extent of those to whom it is exposed by the other means of exploration, and, in a practical point of view, it is of little importance. For, if the exact measure is necessary, it is easily obtained. For that, it suffices to mark well how many times the field is limited by the extremity of the sound, how many times it finds itself contained in each of the principal diameters of the calculus.

The interior diameter of the sound being known, we can con-

clude on the dimensions of the calculus with a quite sufficient exactitude. It is very rare that the surface of the stone be sufficiently smooth, so as not to furnish points of observation. It is thus that our designer, M. Lackenbauer, has been able to measure the different calculi which he has represented, and of which you have seen the designs. These measures have been proven just, upon certain ones after their extraction, and upon others whilst they have been taken in the "litholabe," in order to be crushed.

Before going much further, I will give you some details in regard to the calculi, from which I have made designs after nature, in the bladder of the patients, before they were operated on. One represents a group of four calculi, which brought a sick man into my service in the month of February, 1862.

In the month of October preceding, he had consulted a surgeon, who had proved the presence of some gravel, and had scraped some debris into the grasp of the litholabe. Some days after, the surgeon introduced the instrument anew, and not finding any fragments, declared the patient cured.

From the first examination by the aid of a sound, I proved the presence of a small calculus, very moveable; such was also the diagnostic of a confrere, well versed in catheterism. Some days after, the endoscope showed us the four calculi, such as they have been designed by M. Lackenbauer, on the 9th of March. The 16th of March, a new examination enabled this artist to design them in the two groups, in each of which one of the small calculi is found hidden. The endoscope had permitted, at first, to verify, at the "bas-fond" of the bladder, a large depression, very deep, but in which the calculi had collected, so much that the rest of the vesical surface was covered over by the fleshy columns very much developed. After two seances of lithotrity, the endoscope proved the presence of fragments. It became necessary to seek these fragments, which the bladder could not get rid of, on account of the commencement of paralysis and hypertrophy of the prostate.

Some days later, the patient, who did not suffer any more, was taken with stoppage or extreme difficulty of breathing, and succumbed to an old disease of the valves of the heart.

The autopsy showed the depression of the "bas-fond" of the bladder and the columns which the endoscope had discovered. At the first seance of lithotrity, in seeking to measure the calculus, I have always found by a very great scattering of the branches of the litholabe the greatest of the diameters transversely of a large calculus. This is the diameter which finds itself in a sence-antero-posterior.

After the configuration of the calculus, it appears evident that they are not fragments of a calculus greater than had been broken by the first surgeon.

It is very evident that the view of a calculus will add something to the certainty that the touch will give to its presence. But you may say that there are some causes which render very difficult the finding a stone in the bladder. Thus, whilst it is small and very mobile in a very large bladder, in a way it flies before the sound, without giving place to a sensible shock. In this case, the sight cannot leave any doubt, and it suffices by a *coup d'œil* thrown upon the Fig. 5, to convince that a gravel cannot escape, provided that the sound can be directed towards it. The rugose state, smooth, broken of the surface of the calculus, display themselves more surely than by means of the sound, and there is no other means of appreciating the color, which often permits you to presume upon the composition.

Simple catheterism gives us but a few precise ideas of the dimensions of the calculus; the litholabe likewise; but it cannot comprehend it in one sense, neither can it give the measure of all the diameters, for it is known that each calculus affects, in general, always the same position, determined by the relation which exists between its form and that of the bladder. The endoscope, on the contrary, shows all the diameters, so much more than one can accomplish with the aid of the sound, by displacing the calculus and making it present in different positions.

The number of the calculi is, again, an important condition for the treatment, and difficult to know by the ordinary means. Beyond doubt, in seizing a calculus in the grasp of a "brise pierre," and in seeking to explore the "bas fond," we can as-

sure ourselves that there exists a second. But, if there are two, three, four, or more, we can perceive them, so long as the endoscope permits us to count them.

I have not had other occasions of observing multiple calculi, but upon the cadaver it is easy to perceive a great number of stones introduced expressly into the bladder. If it is important to verify the presence of a calculus, and the different particularities which it is necessary for us to know, it is just as important for us to know that it does not exist as it is that it does. This error, however, can present itself, it has had a place and it still remains in the annals of medical science, some cases of patients having been cut without having a stone. Authors indicate many causes of this terrible error, the principal ones are, hard matter contained in the rectum and pressing against the base of the bladder, it appears to me difficult that in this case the contact should be sufficiently rough to deceive a well practised hand; it is not the same of an osseous tumor of the pelvis making a prominence in the bladder, and which can give, well covered by their tunics of this organ, a sensation of hardness capable of deceiving the surgeon, or very much to embarass him.

A fleshy column, resisting, has also been noted as a cause of error; it has been well objected, too, that it had not a hardness comparable to that of the stone, but I can tell you by experience that it is from cases of induration of the vesical walls when the fleshy columns are sufficiently hard, that it is very difficult to distinguish the sensation which we experience in touching with the end of the sound from that which is caused by contact with a calculus.

In addition to this, sometimes the mucous membrane, in old affections of the bladder, becomes encrusted with lithic matter. Then you have the resistance of a hard body and the rude touch of a stone. In this case, it is almost impossible, by the aid of the sound, to assure ourselves of the truth.

It can be objected, perhaps, that the question can be solved by means of the litholabe, but, very often, it leads to the belief of an adherent calculus, and the manœuvres by which it seizes

the vesical prominence and presses it in the grasp of the instrument, in seeking to displace it, cannot certainly be without danger. I have often had patients who presented this disposition, and whom I have observed at the Hotel Dieu, whilst I was surgeon of the Central Bureau. The sensation was that of a calculus. I requested Ph. Boyer and Leroy (d'Etiolles) father, who had come into the service, to give me their advice, but after a very attentive examination it was impossible for us to decide on a certain diagnosis, and we could not decide on anything, if it was not that the sick man being in a very bad condition to be operated on, we should have decided on it. Some days later, the autopsy showed us the alterations which I have spoken to you of. If I had had the endoscope, you do not doubt, I think, after all that you have seen in this amphitheatre, that the question could have been decided while the patient was living.

One question which presents itself very often, and which is of no little importance, is that of the adherence or enchainment of the calculi, upon which often depends the mode of operating. One suspects this enchainment whilst the stone is always found at the same point which we can displace, whilst the instrument glides smoothly over the surface without moving it; but it is rare that we arrive at a certainty without opening the bladder. If we survey the observations of united or enchained stones you will perceive that often this disposition had not been perceived, except during the operation, whilst the forceps could not seize the calculi, or to hold them after having seized them.

From it results a very embarrassing position, when the surgeons have often given proof of *sang froid*, of ability, of promptitude, and of decision. But if sublime has been the success, it will be of more value in operations less difficult, and operators will prefer to know in advance the difficulties they have to encounter.

By means of the endoscope, we can assure ourselves of the disposition of the calculus, and of the causes which render it immoveable. In effect, in this case, one finds around the calculus some clots of mucus, of prominences, of vegetations, which fix it in its place. I have not yet made sufficient observations

in order to give you a description of the different modes of enchainment, but the following observations can supply them in part:—

The first, is that of a calculus, which I have examined and made a design of, from the Hospital Saint Antoine, in the service of Prof. Jarjavay. The patient presented the rational signs of a calculus, which M. Jarjavay found, in fact, by catheterism. But this calculus was difficult to reach, the litholabe could not seize it; at the same time, it could not be determined whether it was fixed or moveable. However, M. Jarjavay suspected that it was fastened, but not being fully satisfied, he requested of me the aid of the endoscope. The endoscope resolved the question completely. The calculus was, in effect, retained between the projections of the bladder; the right extremity appeared to be free, the left extremity and the superior border being surrounded by a ridge of the mucous membrane, and the inferior border, finally, is in part hidden by a veritable tumor, upon which is noticed an ecchymosis, which appears to result from the pressure of the grasp of the litholabe, in the forceps made to seize the calculus, proving that if the expert surgeon had insisted upon his tentatives, it would have resulted in a wounding of the vesical mucous membrane. The endoscope would have prevented, beyond all question, a similar accident.

The second observation was furnished me by M. Houel, temporarily in charge of the surgery at the hospital clinics, during the last vacancies. The irritation of the bladder in his patient prevented me from making a design of this calculus, but M. Houel has earnestly requested me to give the following observation, in which the autopsy confirmed the results of the endoscopic examination:—

Calculus fixed to the Bladder—Examined with the Endoscope.

J., aged 58 years, a paint merchant. This man was very large and strong, but he appeared to be suffering much. He said to us, that for many years he had suffered much from the bladder. He is obliged to urinate very often; the micturition is painful and very difficult.

Whilst he walked, he felt a feeling of weight in the perineum; he often had pains of the kidneys. For five or six months, he had lost his appetite and had become thin and poor; his urine was very turbid and deposited a sediment of mucus, very thick, sometimes mixed with blood. Never, in addition to what we have said, had this patient seen his jet of urine suddenly arrested, except to return some moments after.

Whilst a sound is introduced into the bladder, mark that which is observed: the canal of the urethra is free and allows the sound to pass easily. One time that it penetrated into the bladder, we could reconnoitre a bladder of reasonable dimensions, with columns, a bladder very smooth. If we carry the pavilion of the sound a little higher to the left of the patient, we perceive that the end of the sound is arrested by a stone, which, by consequence, ought to be found at the base of the bladder and to the right. In introducing a lithotrity instrument, it is impossible to seize the stone; we touch it but it will not fall into the grasp of the instrument, and we cannot seize it.

This examination, repeated several times, induced M. Houel to diagnose a fixed calculus of the bladder, although M. A. Richard, in sounding this patient, believed the calculus free, because the end of the instrument dragged the calculus and the bladder. M. Houel solicited M. Desormeaux to dissipate the doubt, by means of his endoscope. I will not enter into the details of his mode of action, which is known by all surgeons; I will speak of nothing except the result of the observations.

In manipulating the instrument into its necessary manœuvres, one can see, in turning the instrument in divers ways, a whitish granular body, strewn with small blackish points which appear to be blood. This body, which is no other than the calculus, presents a light or small prominence; and, if we should move the instrument, we arrive at the edge of the calculus, and we see very distinctly that this white body is surrounded and, in part, covered by a reddish membrane, which is continuous with the vesical mucous membrane.

This examination confirmed, very closely, the diagnosis of

calculus fixed in the bladder. In the face of this condition, M. Nélaton had counselled the sub-pubic incision, and M. Houel commenced the operation, when the patient suddenly died.

The autopsy gives the following signs or appearances:

The bladder is not very much changed; the calculus is well situated at the place which the examination had given to us; the calculus is well covered by the bladder upon its borders, but at this level the bladder is a little hypertrophied, likewise, the calculus is strongly held by the bladder; furthermore, the calculus presented an eminence, which penetrated the vesical walls, where it was contained, as in a cellule; the calculus had yet the black points that we have upon the living. One point, sufficiently curious to note, is, that to the naked eye the calculus appeared less voluminous than with the endoscope.

If we resume this lesson, we will find that in the affections of the bladder, the endoscope oftentimes gives more of certainty in its diagnosis than the other means; it permits us to see the state of the organ, to reconnoitre the nature of its tumors, the disposition, the number and the complications of stones, oftentimes better than simple catheterism; better, and, likewise, with less danger, than the "litholabe."

We shall then conclude that if we cannot, in the vesical affections as in the affections of the urethra, proceed directly to operations, it is not less useful to the treatment, in furnishing valuable indications to determine the choice of the method for operating, and to direct the instruments in the operation to be practiced.

PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF COD LIVER OIL.

"The minute division of the iodine in cod liver oil, the particular state in which it exists, must singularly facilitate its absorption by the tissues, and can in this way contribute more than the absolute proportion of this substance to the marked effects which this oil exerts on the animal economy.

"Also, iodine in the oil is not eliminated from the system, *as the other soluble preparations of iodine;* in this elementary combination its action is slower, more regular, and more persistent, as it is successfully set at liberty in the economy, in proportion as cod liver oil is gradually decomposed in the blood."
—BOUCHARDAT, *Professor of Hygiene, at the Academy of Medicine, Paris.—Manuel de Matiere Medicale, page 749—1856.*

The action of cod liver oil on the system is a double one; it is nourishing by its fatty elements, and curative by its medicinal bodies—iodine, bromine, and phosphorus, which it naturally contains; and to these three substances must be attributed its superiority over other fats or oils, either animal or vegetable, in the cure of diseases. These facts, discovered and proven by physiologists in their experiments on animals, and confirmed by the experience of physicians in their daily practice, have been corroborated during the last eight years, in a most illustrative manner, by the administration, to a large number of patients, of a cod liver oil five times richer in iodine, bromine, and phosphorus, than any of the cod liver oils known before.

Cod liver oil, as well as other fatty substances, when taken in too large quantities, is apt to disturb the stomach, and derange the functions of the intestinal canal. Only a small quantity can be digested and assimilated, the rest passing off unchanged, producing more or less frequent and abundant alvine evacuations, in which are contained the superfluous oils or fats. Observations prove that the gastric juice has no action whatever on fats or oils, the pancreatic juice being the only body which, by its emulsive properties, causes the absorption of these substances into the economy; and, therefore, all the oil not emulsioned by the pancreatic juice is evacuated by the intestines just as it was taken. The knowledge of this important fact is due to the recent observations of Claude Bernard, a well known authority in physiology. The oil, once emulsioned by the action of the pancreatic juice, is brought into the general current of the circulation as follows: it is first taken up by the chyliferous vessels on the surface of the small intestines, and passing through the mesenteric glands and the thoracic duct, it is discharged in the left subclavian vein, where it mingles with the venous blood returning to the right cavities of the heart. This blood, and the fresh nutritious elements, furnished by the two subclavian veins, are passed into the lungs to be there oxidized and altered; while passing through the pulmonary circulation, the oily molecules are modified and almost all of them destroyed. The blood, then, ready anew for nutrition, passes in the left ventricle, to be thence distributed through the arterial system, carrying along with it some oily globules left undecomposed during their speedy passage through the lungs, said oily globules being afterward successively altered in the circulating blood.

The medicinal oil, evidently brought undecomposed into the lungs, and partly in the general current of the circulation, is

there modified, losing not only its emulsive form, but also its oleagineous characteristics, so as to constitute a part of the arterial blood. Iodine, bromine, and phosphorus, are then set free, during the process of nutrition of the tissues, each part of our system appropriating to itself the substance it needs.

The tissues, in contact with the nutritious blood, having a tendency to appropriate to themselves the elements most proper to maintain their healthy condition, or to alter it, when unhealthy, is it not judicious to conclude that the lungs first, and then the rest of the system, when affected with bronchitis, phthisis, scrofula, under any variety, or rickets, etc., etc., are highly benefited by the healing and restorative action of the oil and its medicinal constituents, minutely, naturally, and persistently brought in contact with the diseased parts?

That oils and fats are successively carried through the economy, and transformed, as above described, is amply demonstrated by the experiments of the most eminent modern physiologists, such as Claude Bernard, Tiedemann and Gmelin, Leuret and Lassaigne, Landras, Bouchardat, Blondlot, Delafond, Gruby, L. Corvisart, J. C. Dalton, Jr., A. Flint, R. Dunglison, etc.

We must not forget this important point, that oils or fats go into the blood undecomposed and unchanged, being merely infinitesimally divided by the pancreatic juice; but if an oil contains substances, in a close chemical combination, so that they cannot be easily separated, these substances will of course be carried into the blood with the oil itself. This is just the case with Fougera's cod liver oil, which contains a large proportion of *iodine, bromine, and phosphorus.* Iodine and bromine have so strong an affinity for oil, that they cannot be separated from it by chemical reagents, not even by strong sulphuric acid. They must, therefore, be carried with the blood and liberated when the oil is transformed, in the process of nutrition, into its elements, and becomes the chief agent by which the heat of the body is maintained. Knowing, then, that to the nutritive property of the oil is superadded the alterative, fluidifying and stimulating power of a comparatively large quantity of iodine, bromine, and phosphorus, who can doubt the efficacy, as a medicine, of this new cod liver oil?

Phosphorus, a part of our brain and bones, is a powerful diffusible stimulant, exciting the nervous organs, heightening the muscular power and mental activity, and relieving the despondency of mind occasioned by many serious diseases.

Iodine and bromine are superior to all alteratives, for im-

proving and purifying the depraved nature of the blood. They rae the best remedies we possess for checking and controlling the swelling and induration of the glandular system, the ulcerative process in scrofulous complaints, the diseases of the lungs, etc. Obviously the main point, in such serious affections, is to check and control at once the ulcerative process, and to do so it is of the greatest importance to use *prompt and active medication.*

Until of late, natural and pure cod liver oil has been the best remedy, and the one most generally used, with more or less success, in diseases of the lungs, when of a tuberculous character. The period of the malady, when the oil was first employed, and also the purity and strength of the remedy, accounting for the success or failure.

Pure cod liver oil is more likely to cure consumption, scrofula, rickets, swelling of the glands, etc., in the first stage of the disease; in the second and third stages it mitigates the severity of the symptoms, and prolongs the life of the patient, but seldom saves it.

The reason for this difference of action is simply that the pure oil contains iodine, bromine, and phosphorus, only in minute quantities, which, although sufficient to cure a disease in the beginning, is not powerful enough when it assumes a graver type.

If we suppose for an instant the discovery of a new natural cod liver oil, containing more iodine, bromine, and phosphorus, than the oil in present use, there is not the least doubt but that every physician would prescribe it in preference, fully confident of its enhanced qualities. The natural consequence of this proposition explains satisfactorily why the medical profession should give, *and do rightly give*, the preference to Fougera's Compound Iodinised Cod Liver Oil, which contains a larger proportion of iodine, bromine, and phosphorus than the oil in present use; these active elements, as before remarked, are in such a peculiar combination that their action is slow, regular, and persistent, being successively set at liberty in the economy, in proportion as the oil is decomposed in the process of animal life.

Some physicians are so well convinced that the curative properties of the oil reside in these three substances, that to obtain a full effect, they prescribe very large doses of the oil, sometimes giving two, three, and four tablespoonfuls, three or four times a day, the larger quantity amounting to no less than half a pint daily. That their object is not attained is fully proven by physiologists, who have demonstrated, that only the

quantity of oil, emulsionised by the pancreatic juice, is digested and carried into the blood, the rest being lost and passed off nearly as taken.

Being deeply impressed with the above physiological and chemical facts, Mr. E. Fougera instituted experiments, and, after many trials, has succeeded (1858) in preparing a *compound iodinised cod liver oil;* which is simply the best Newfoundland cod liver oil, combined with four times as much of iodine, bromine, and phosphorus as it naturally contains.

Pure cod liver oil varies considerably in composition, as may be seen by comparing the different analysis published in works of chemistry and materia medica. A quart contains one to four grains of iodine; one-eighth to three-fourth of a grain of bromine; one-quarter to one-half of a grain of phosphorus. In 1860, Mr. Fougera published in the *Repertoire de Pharmacie*, edited by Prof. Bouchardat, at Paris, the formula of his oil, which contains per quart, in addition to the above quantities: iodine, sixteen grains; bromine, two grains; phosphorus, two grains.

The combination is made so that the odor, taste, and color of the natural oil is preserved.

Fougera's preparation being consequently five times more active than the richest commercial cod liver oil, will tend to restore health by its curative action thus enhanced, in a much shorter time than the simple kind, and attains the desired effect where the other will fail.

The dose of this oil is *only* a tablespoonful for adults, and a dessert or a teaspoonful for children, according to age, three times daily; it may be administered at any hour, but it is preferable to select the time of meals, since we know that the pancreatic secretion manifests itself only during the stomachic digestion, to act immediately on the alimentary principles, as soon as they pass from the stomach into the intestines. Though the quantity of iodine is very small in each dose, it acts nevertheless with a greater efficacy than a larger quantity of any of the iodides, for the reason stated by Professor BOUCHARDAT and others, that iodine in cod liver oil is not elminated from the system as the other soluble preparations of iodine, but is successively deposited in the economy as the oil is graduly decomposed in the blood.

When iron is required with the oil, Fougera's dragees or syrup of pyrophosphate of iron will be found the most agreeable and active adjuvant. It is best for children and delicate persons to take the syrup of iron immediately after the oil.—*Published by consent.*